

injection, so that I believe (as may be verified in spirit specimens) that in the *Pleurobranchus* the circulatory apparatus communicates directly with the exterior.

The demonstration of a direct communication between the exterior and the circulatory apparatus, renders the assumed existence of an aquiferous system *a priori* less necessary, in order to explain the great changes of volume of the body of Mollusks. But I believe that, in addition, microscopic examination will show the direct continuity of the genital glands with the lateral orifices placed at the base of the foot in the Lamellibranchiata.

This communication of the vascular apparatus with the external water, has a very important bearing on the history of the nutritive processes. The physiological conceptions derived from the study of the higher animals are singularly affected by finding creatures which can at will throw out a portion of their blood, or, on the contrary, dilute with water that which is, *par excellence*, the nutritious element.

This would be sufficient to prove, were it necessary to do so, how wide is the difference between the vital processes of the lower and of the higher animals.

MISCELLANEOUS.

On the Hydra rubra of Mr. Lewes.

By the Rev. W. HOUGHTON, M.A., F.L.S.

To the Editors of the Annals of Natural History.

Solihull, Feb. 10, 1860.

GENTLEMEN,—In your January Number, Mr. G. H. Lewes records the discovery, on Wimbledon Common, of what he terms a new species of *Hydra*. His description of the animal is, that it is “a beautiful bright-red species, differing in intensity of colour in different states of the animal, being sometimes of a brick-dust hue.” Van der Hoeven, Mr. Lewes says, enumerates *three* species of *Hydra*, which he calls *H. viridis*, *H. fusca*, and *H. grisea* respectively. Now, the authors of the ‘Micrographic Dictionary’ mention *four* species, namely, *H. viridis*, *H. fusca*, *H. attenuata*, and *H. vulgaris*. Dr. Landsborough, also, in his little book, ‘The History of British Zoophytes,’ describes these same four species, with the addition of *Hydra oligactis* (Baker). The description Dr. Landsborough gives of *H. vulgaris* (for it is to this species I wish to direct attention) is that it is about the same size as *H. viridis*, but that it differs from it in colour, “being of an orange-colour, or sometimes of a brown, or even *red tint*.” Under the word “Hydra,” in the ‘Micrographic Dictionary,’ I read the following description of *H. vulgaris*: “Body orange-brown, yellowish, or *red*.” How does this differ from Mr. Lewes’s so-called new species?

Why this animal has ever been designated as *H. vulgaris* I am at a loss to conceive. I have searched pools and ditches innumerable for *Hydræ*; and my experience tends to show that this species

is by no means "common," for I have found it only in four or five localities.

The last time I made acquaintance with this *red species* (be its name what it may, but *vulgaris* suits it as far as description is concerned) was at Bala Lake, in the month of June last; and there it was in great profusion,—indeed, the only species I saw. It was found attached to the under surface of stones near the margin of the lake, and reminded me at the time very forcibly of the red *Dianthi*, to which Mr. Lewes also compares it. It was associated with *Fredericella sultana*, and with another (very rare) Polyzoön, *Plumatella punctata*.

But what is Van der Hoeven's *Hydra grisea*? Is it the same as the brown variety of *vulgaris*? Has it any synonyms? Whose is *H. vulgaris*? Certainly here in Warwickshire it is a misnomer, being the very opposite of common; indeed, I do not remember ever to have seen it in this neighbourhood. I have occasionally found it in Shropshire, and always in very clear, pure water.

H. fusca is more abundant here than even *H. viridis*.

I remain, Gentlemen, Yours, &c.,

W. HOUGHTON.

[Dr. Johnston in the 2nd Edition of his 'British Zoophytes' describes four species: *H. viridis*, *H. vulgaris*, *H. attenuata*, and *H. oligactis*. The *H. grisea* of Van der Hoeven is probably the *H. grisea* of Linnæus, which is given as a synonym of *H. vulgaris*, Pallas.—ED.]

On the Genus Hyalonema. By Dr. J. E. GRAY, F.R.S. &c.

In my original description of the genus *Hyalonema*, published in the 'Proceedings of the Zoological Society' for 1853, p. 63, the publication of which I had delayed in hopes of being enabled, by the acquisition of more copious materials, to clear up some points which did not appear at that time capable of satisfactory elucidation, I described the "*Polypus ignotus*," but placed it near *Gorgonia*, on account of its being covered with bark, like the Barked Corals; and, in a recent paper in the 'Annals,' I suggested its being considered as a peculiar suborder of that class of Zoophytes.

Mr. John J. Brandt has lately published a description and figure of the animal, and shows that, instead of having eight pinnated tentacles, like the *Gorgoniadae*, it has twenty or more simple conical ones, like the *Actiniæ*. Mr. Brandt proposes to form for its reception a peculiar family of the "*Polyactinia*," under the name of *Hyalochætides*. The figure of the animal and the structure of its external coat, and especially of the aperture of the cells, greatly resemble those of the genera *Corticifera* and *Mammillifera* and the other "*Zoanthaires coriaces*" of Blainville, indeed, one is now astonished that we had not before observed the similarity, and placed it with those animals. But the genus (or family) differs from these animals in having an erect axis, formed of a bundle of twisted silicious filaments.